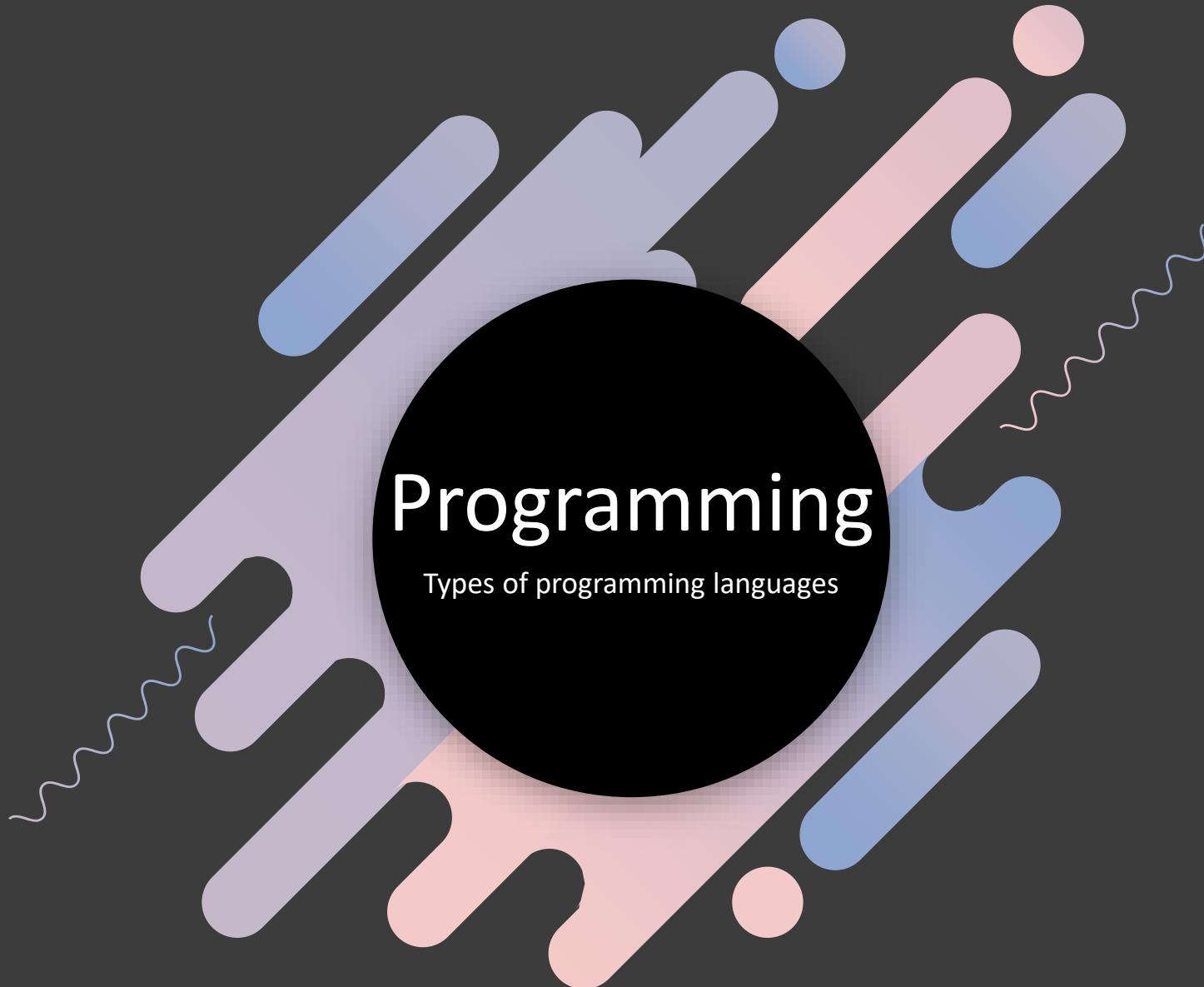


Programming

Types of programming languages



Programming

What is a Programming

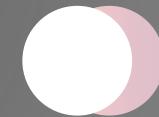
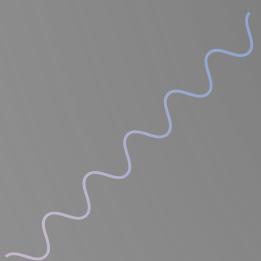
What is a Programming Languages?

- A programming language allows people to create programs that tell machines (computers) what to do.
- A programming language also has words , symbols and rules of grammar.
- The grammatical rules are called **syntax**.
- Each programming language has a different set of syntax rules.



Programming

Levels of Programming languages



```
#include<stdio.h>
Void main()
{
    int a, b, c;
    printf("Enter two numbers:\n");
    Scanf("%d", &a);
    Scanf("%d", &b);
    c=a+b;
    printf("Sum of 2 numbers is %d", c);
}
```

```
LOAD r1,b
LOAD r2,h
MUL r1,r2
DIV r1,#2
RET
```

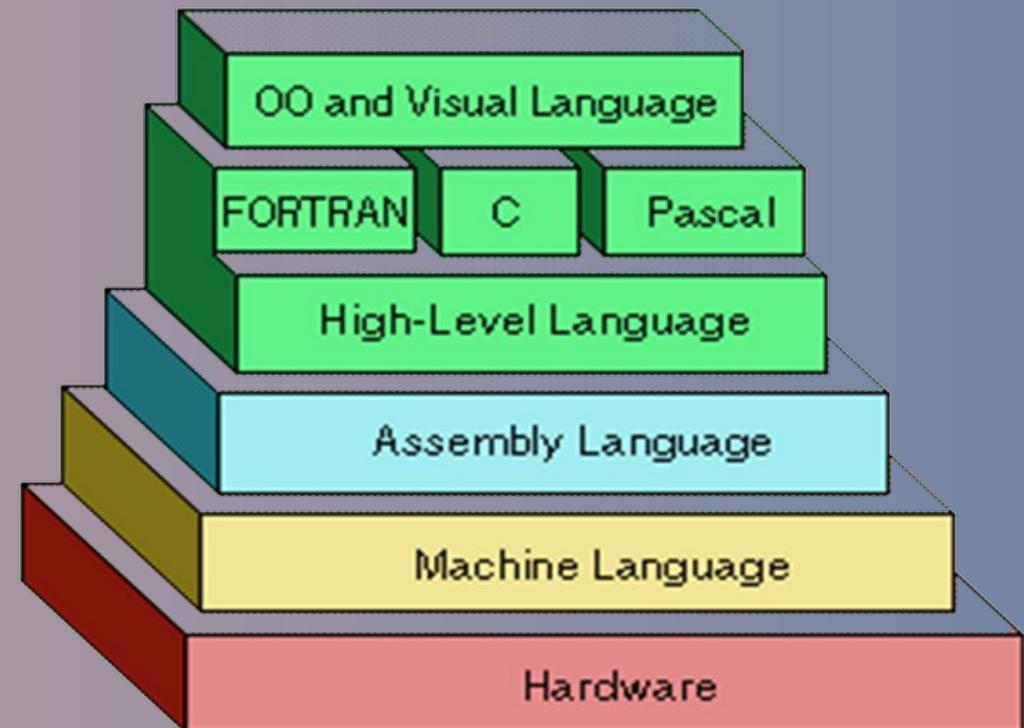
- High-level
- Low-level
- Machine language

```
01101000011001010110
11000110110001101111
00100000011101110110
11110111001001101100
01100100
```



Levels of Programming languages

Programming languages are mainly classified in to three categories. High level language like C,C++,JAVA,PHP etc. High-level languages are designed to be used by the human operator or the programmer. High level languages also require translation to machine language before execution.



How to be a good Programmer

Stay Healthy as a
Programmer

Important lessons About
Programming

01

03

05

02

04

06

Things you should know
Before starting programming

Why the best job?

Don't say this Things

8 Things Every Programmer Should Know

Programming
Languages

Data
Structures &
Algorithms.

Scripting
Languages

Database
and
SQL

Source
Control

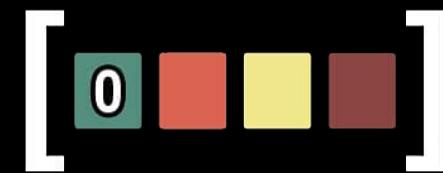
Networking
Basics

Top Data Structures You should Know

by Mohammad Reza Firuzabadi

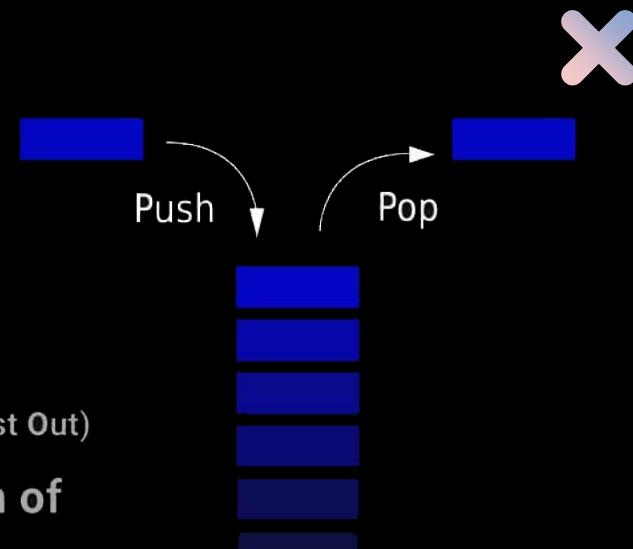
Arrays

An array consists of a collection of elements, each identified by an index.



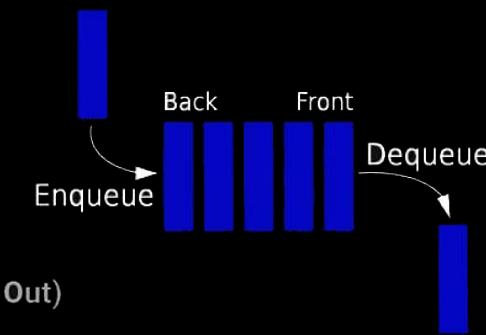
Stacks

LIFO or FILO (First In, Last Out)
serves as a collection of
elements with push & pop operations.



Queues

LIFO or FIFO (First In, First Out)
serves as a collection of elements
with enqueue & dequeue operations.



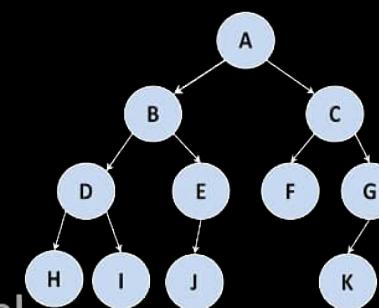
LinkedList

Linked List is a linear collection
of elements, that each element points
to the next. Nodes contain: data & reference.



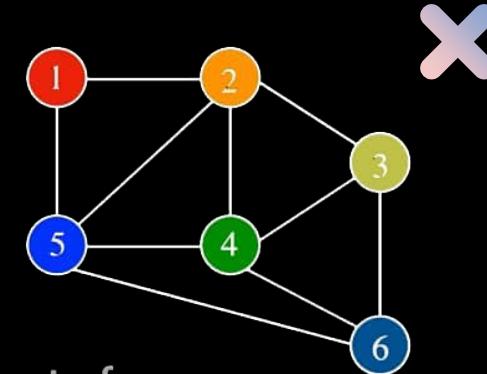
Trees

Tree simulates a hierarchical tree structure, with a root value & subtrees of children with a parent node, represented as a set of linked nodes.

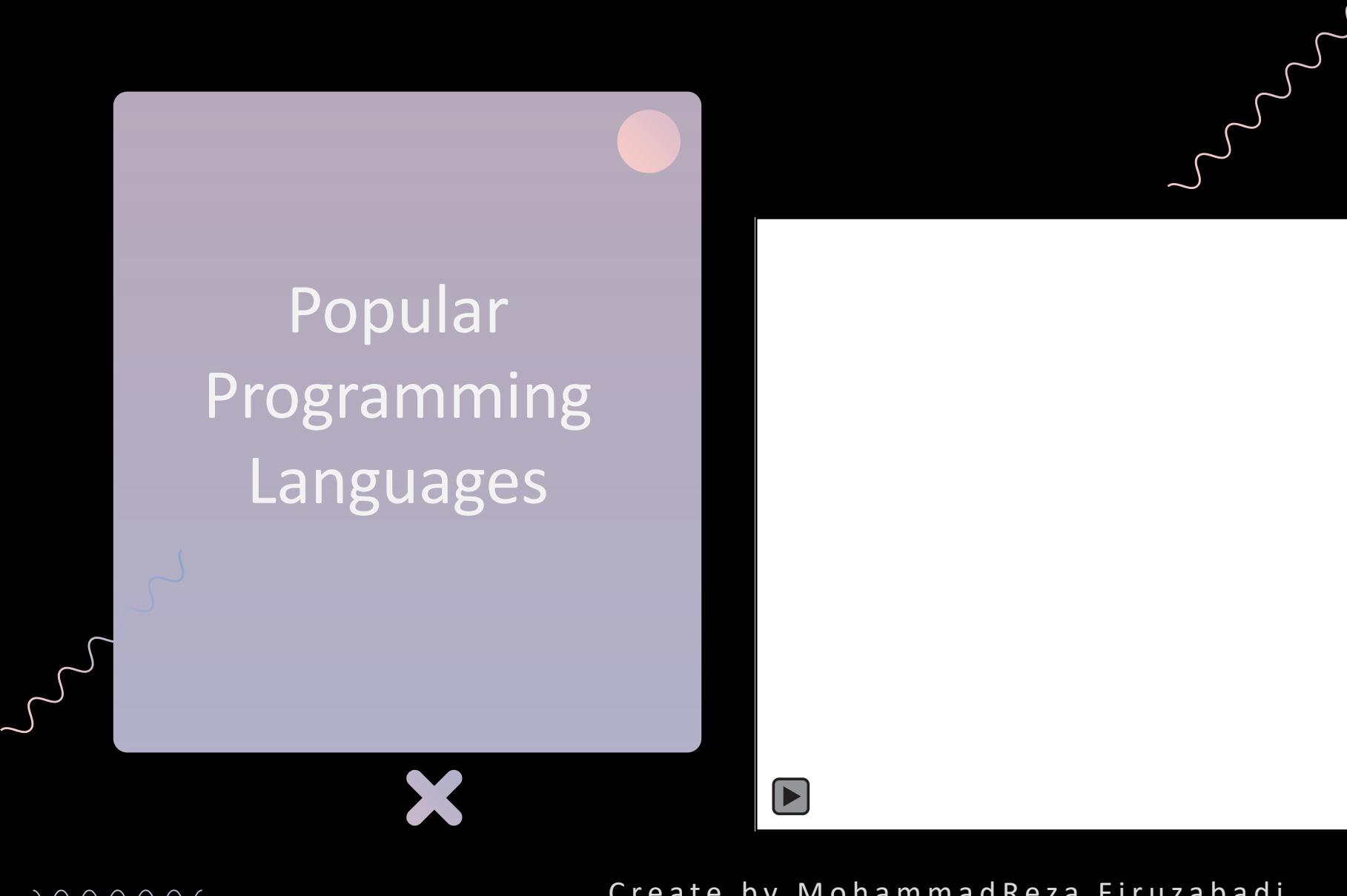


Graphs

A graph consists of a finite set of vertices together with a set of pairs of these vertices known as edges.



Popular Programming Languages

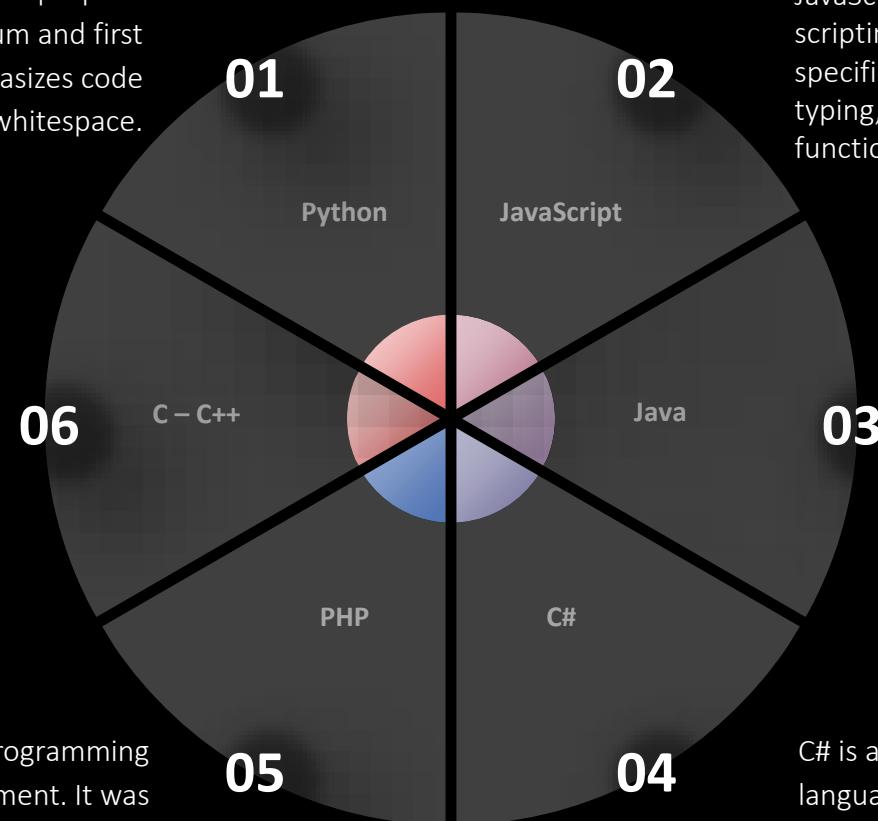


Programming Language

Python is an interpreted, high-level, general-purpose programming language. Created by Guido van Rossum and first released in 1991, Python's design philosophy emphasizes code readability with its notable use of significant whitespace.

C++ is a general-purpose programming language created by Bjarne Stroustrup as an extension of the C programming language, or "C with Classes".

PHP: Hypertext Preprocessor is a general-purpose programming language originally designed for web development. It was originally created by Rasmus Lerdorf in 1994; the PHP reference implementation is now produced by The PHP Group.



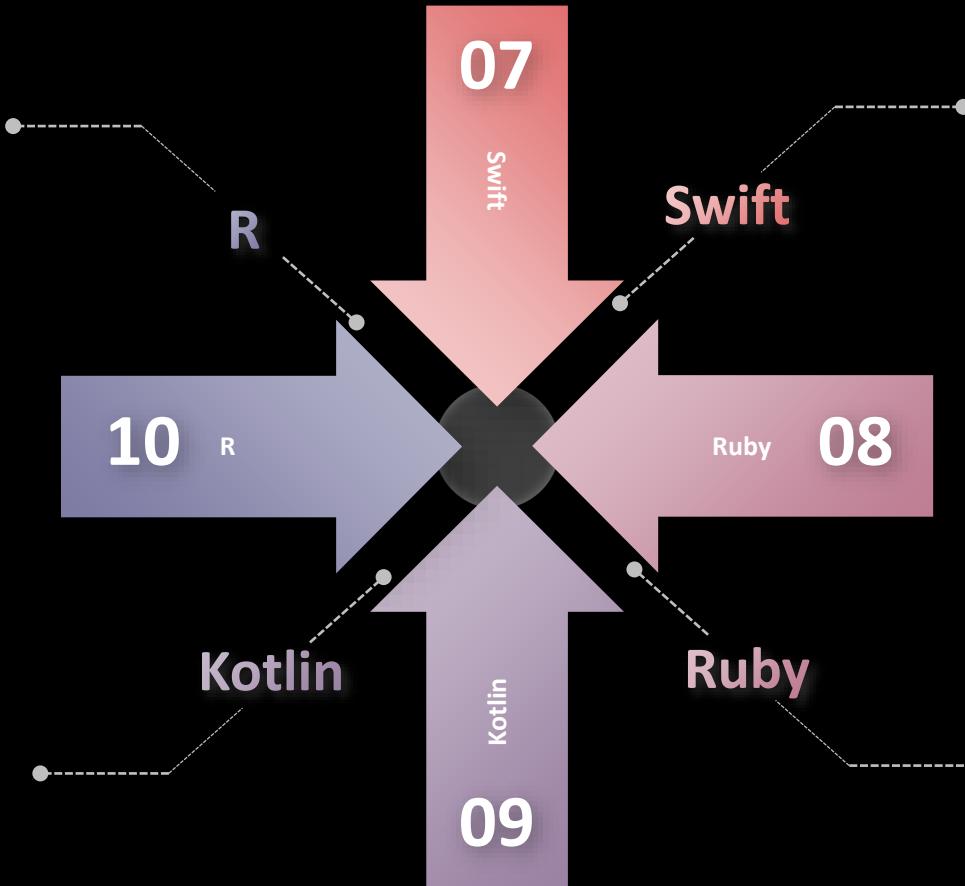
JavaScript, often abbreviated as JS, is a high-level, interpreted scripting language that conforms to the ECMAScript specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

Java is a general-purpose programming language that is class-based, object-oriented, and designed to have as few implementation dependencies as possible.

C# is a general-purpose, multi-paradigm programming language encompassing strong typing, lexically scoped, imperative, declarative, functional, generic, object-oriented, and component-oriented programming disciplines.

Programming Language

R is a programming language and free software environment for statistical computing and graphics supported by the R Foundation for Statistical Computing. The R language is widely used among statisticians and data miners for developing statistical software and data analysis.



Kotlin is a cross-platform, statically typed, general-purpose programming language with type inference. Kotlin is designed to interoperate fully with Java, and the JVM version of its standard library depends on the Java Class Library, but type inference allows its syntax to be more concise.

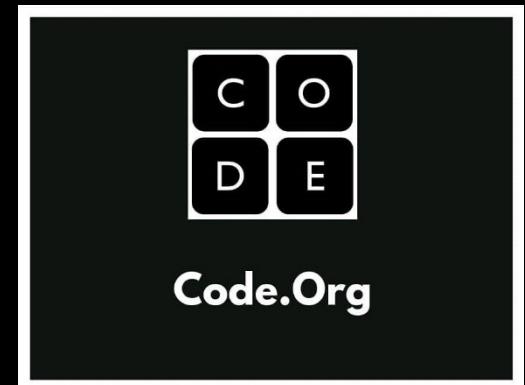
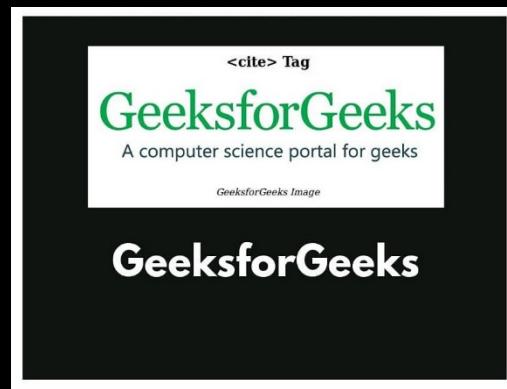
Swift is a general-purpose, multi-paradigm, compiled programming language developed by Apple Inc. for iOS, iPadOS, macOS, watchOS, tvOS, Linux, and z/OS. Swift is designed to work with Apple's Cocoa and Cocoa Touch frameworks and the large body of existing Objective-C code written for Apple products.

Ruby is an interpreted, high-level, general-purpose programming language. It was designed and developed in the mid-1990s by Yukihiro "Matz" Matsumoto in Japan. Ruby is dynamically typed and uses garbage collection.



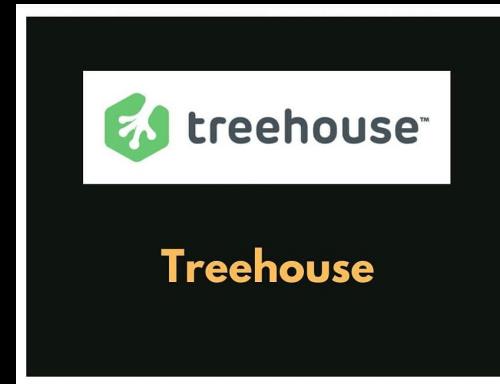
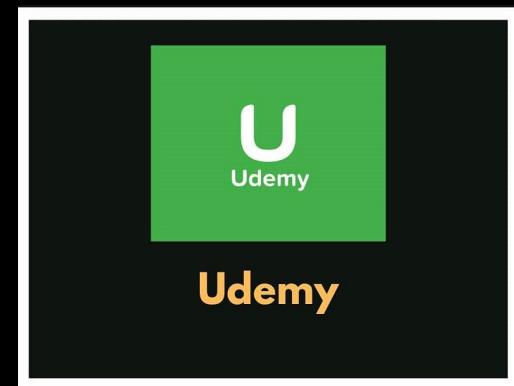
7 WEBSITE TO LEARN PROGRAMMING BY READING

Website



7 WEBSITE TO LEARN PROGRAMMING BY VIDEOS

Website



Road Map 2019

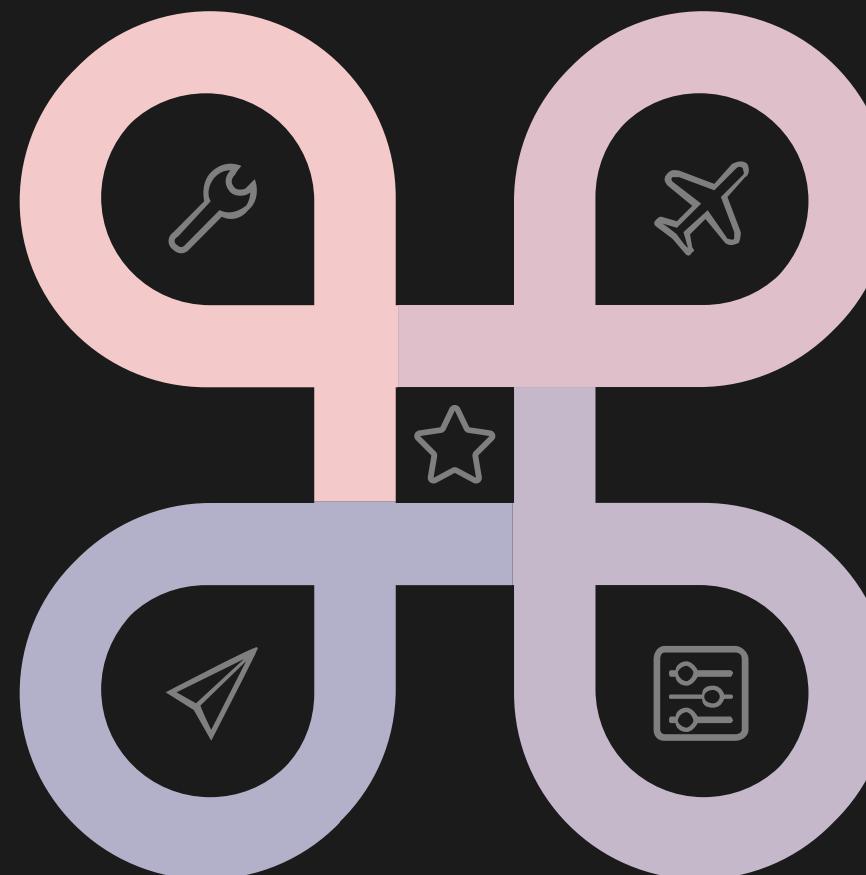
Web Development

Web development is divided in following sections.

- **Frontend Development** - Client side
- **Backend Development** - Server side
- **Devops** - Devops is emerging as separate category where specialized person handle site maintenance.

1. If you are completely new then start with PHP.
2. After that learn basic sql & DB operations.
3. Try to create small CRUD websites.
4. Finally, you can learn languages like Asp.net core(c#), Ruby on Rails, Django(Python), Node.js(Javascript).
5. Try to learn & use Web API.

- **Languages:** PHP, C#, Python, Ruby, Javascript
- **Frameworks:** Asp.net mvc, Django, Rails, Node.js
- **Database:** Sql, MS SQL, Sql Server, No Sql
- **Web Server:** Apache, iIS, NGinx etc.
- **Web Hosting:** HostGator, GoDaddy, Bluehost
- **CMS:** Wordpress, Jumla, Drupal etc.
- **Other:** SEO, Web Security, CMD etc



1. Start with basic html,css. & javascript
2. Mix all those things which you have learnt and try to create basic web pages.
3. Learn JQuery & bootstrap.
4. Finally, you can go for javascript frameworks like Angular, Vue & React etc.

- **Languages:** Html 5, Css & Javascript
- **Extended Languages:** Less, Sass, Typescript
- **Css Frameworks:** Bootstrap 4, Foundation, Balma
- **Javascript Library:** JQuery, React, D3.js
- **Javascript Framework:** Angular, Ember.js, Vue.js
- **Package managers:** NPM, Yarn, Bower
- **Other:** Browser Developer Tools, Testing tools

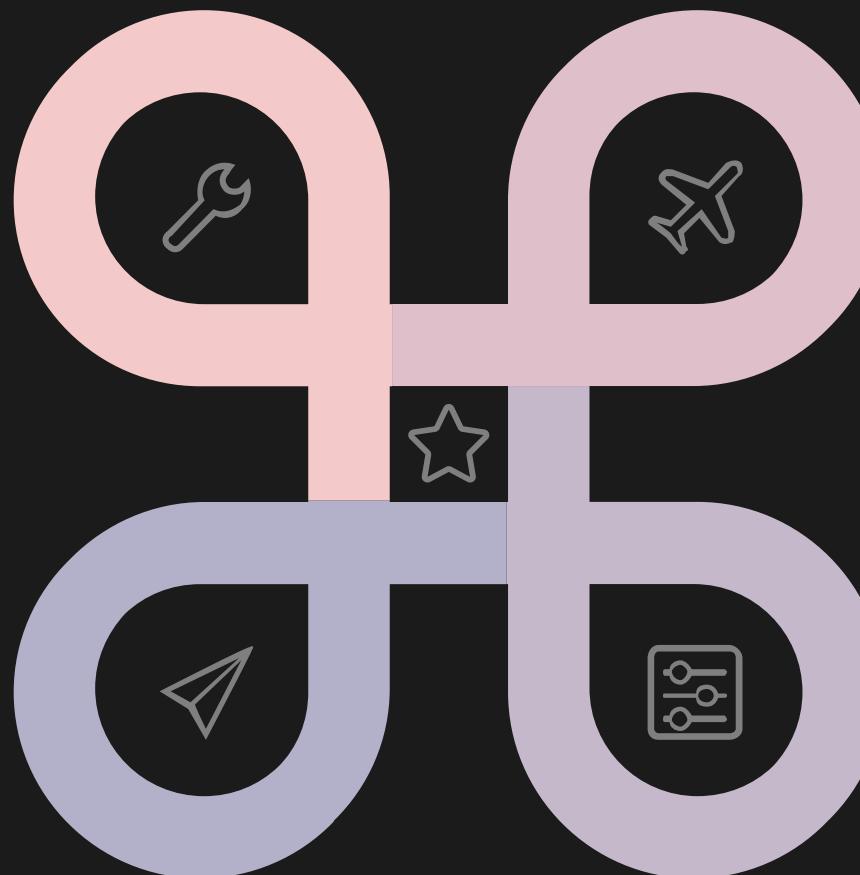
Mobile App Development

App development is divided in few processes.

- **Wireframe** - Blueprint or template for app
- **App Design** - App user interface, mock-ups
- **App Development** - Implementation Business logic, Business process and features.
- **App Testing** - App testing, Automated testing, QA

1. You need a Mac book & iphone.
2. Install Xcode (IDE)
3. Learn basics of Objective c or Swift(**Easy**).
4. Try to learn UI like buttons, loaders, images etc.
5. Now try to build few apps by following tutorials.
6. After that you need to understand SQL.
7. Try to build small apps without tutorials.

- **Languages:** Swift, Objective-C
- **Platforms:** Swift, Xamrin, Ionic, PhoneGap
- **Database:** SQLite, Core Data, Realm
- **Web Hosting:** HostGator, GoDaddy, Bluehost
- **IDEs:** XCode, AppCode, Visual studio(**Xamarin**)
- **Other:** Browser Developer Tools, Testing tools

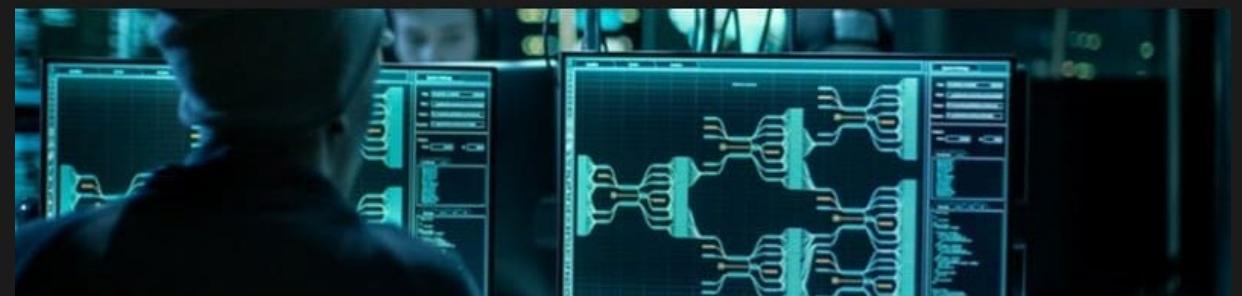


1. First of all you need to install android studio(IDE).
2. First try to learn Java or Kotlin. Kotlin is official language of android development.
3. After that you should learn xml language. It is essential for your app design.
4. Now learn sql and CRUD operation.
5. Try to build small apps like calculator or to do list.

- **Languages:** Java, Kotlin, Sql, XML
- **Extra Languages:** c#, python, Javascript,
- **Platforms:** Java, Xamarin, PhoneGap, Iobic, Unreal engine etc.
- **IDEs:** Android studio, Eclipse, Visual studio
- **Database:** SQLite, Realm DB, ORMLite
- **Other:** Browser Developer Tools, Testing tools

Ethical Hacking

Steps For Learning Ethical Hacking



- First of all, you need to start networking basics.
- After that, you should get familiarity with linux.
- Now you should learn programming language.
Ex Python, JavaScript, HTML PHP,
- Start exploring hacking tools & practices.
- Last but not least, Complete Ethical hacking course and get certificate.

Useful Hacking Tools You Should Learn

- NMAP
- Metasploit
- Burp Suit
- John the Ripper
- Metasploit
- Wireshark
- Cain & Abel
- Ettercap
- EtherPeek
- SuperScan
- QualysGuard
- WebInspect
- LC4
- Network Stumbler



Job Profiles As A Ethical Hackers



- Security Analyst
- Ethical Hacker
- Security Consultant
- Information Security Manager
- Penetration Tester
- Information Technology (IT) Manager

Type of Cyber Crime



- **Spam:** Sending emails with spam links.
- **Denial of Service Attacks:** Attack servers with fake http request to shut it down.
- **Identity Theft:** Access someone's private information without permission.
- **Online Scams:** Accessing bank details by spreading spam emails and fake offers.

What is Ethical Hacking?



Ethical hacking is the process of finding vulnerabilities and weakness of the system with the permission of the owner and find solutions to fix it.

- Ethical hacking is also known as white hat hacking.
- There are other forms of hacking like black hat, grey hat etc.

WANT TO BECOME
ETHICAL HACKERS?



- Many of us have inspired by movies or tv series like Mr. Robot to become hacker. It looks cool on movies.
- Apart from movies, In real life Ethical hacking has lots of opportunities as a career.
- With ever growing use of internet and technology, cyber threat is big issue for modern businesses.
- So, let's find out road map for ethical hacking in 2019.

Resource For Ethical Hacking



- **Books:**
https://www.tutorialspoint.com/ethical_hacking/ethical_hacking_useful_resources.htm
- **Youtube Channels:** edureka / Penetration Testing Linux / HackerSploit / Vivek Ramachandran
- **Blogs:** HackerOne / HakIn9 / HackRead / Latest Hacking News



Thank
You

@MRFiruzabadi